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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,152

12/15/2006

Peter Lindskog

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EXAMINER

PECHE, JORGE O

ART UNIT

PAPER NUMBER

3664

NOTIFICATION DATE

DELIVERY MODE

01/20/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@fbtlaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/585,152	LINDSKOG ET AL.	
	Examiner	Art Unit	
	JORGE O. PECHE	3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 18-29 and 35 is/are rejected.
- 7) ☒ Claim(s) 5-17 and 30-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/29/2006 and 12/15/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt is acknowledged of Applicant's response to election/restriction filed on November 8, 2010.

Applicant had elected species 5 – Figure 14 and had asserted that claims 1-35 read on the elected species.

Claim Objections

Claims 23-24 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 recites the limitation "each of the first analyzer units" in page 11, line 10. There is insufficient antecedent basis for this limitation in the claim. Claims 28, 27 and 18 do not provide explicit antecedent basis for the above term.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 18-29 and 35 are rejected under 35 U.S.C. 102(b) as being unpatentable over Tsuno et al. (Patent No.: 5,719,565).

Regarding claims 1 and 18, 27-28 and 35, Tsuno et al. disclose an anti-skid controller (*computer program*) having accurate road surface detection capabilities, the method and system comprising:

- a wheel speed sensor (*wheel speed sensor (5-8)*) for sensing a wheel speed signal which is indicative of the wheel speed of a vehicle's wheel driving over the ground (see col. 4, lines 66-67; col. 5, lines 30-32; Figure 3); and
- a first analyzer unit (*electronic control unit (ECU) (40)*) coupled to said wheel speed sensor (*wheel speed sensor (5-8)*) which comprises (see col. 51-62; Figure 3):

- a sensor imperfection estimation section (*filter processor (A6a)*) which is designed to estimate a sensor imperfection signal (*high frequency acceleration signal (DVWF)*) from the wheel speed signal (*wheel speed sensor (5-8)*) which is indicative of the sensor imperfection (*filter processor (A6a)*) of the wheel speed sensor (see col. 5, lines 10-20; col. 5, lines 56-63; Figures 1-4);
- a signal correction section (variance calculation unit (A6b)) which is designed to determine an imperfection-corrected sensor signal (*variance DVWB*) from the wheel speed signal (*wheel speed sensor (5-8)*) and the sensor imperfection signal (*filter processor (A6a) signal*) (see col. 5, lines 10-20; col. 5, lines 56-63; col. 6, lines 49-52; Figures 1-4); and
- a ground condition estimation section (road determination unit (A6c)) which is designed to estimate a first estimation value (combining / averaging the first estimation value by using function) indicative of the ground condition from the imperfection corrected sensor signal (*a result determination for a road: good road or bad road*) (see col. 5, lines 10-20; col. 5, lines 56-63; col. 6, line 49 – col. 7, line 18; Figures 1-4, 8).

Regarding claims 2 and 19, Tsuno et al. disclose wherein the wheel speed sensor comprises a segmented rotary element (*wheel (3) / speed sensors (5-8) generate pulse signals having frequencies corresponding to the rotation of wheels*), and the sensor imperfection estimation section (*filter processor (A6a)*) is designed to estimate, at each revolution of the rotary element (*wheel (3)*), a sensor imperfection value, representative

Art Unit: 3664

of the sensor imperfection signal for each of the segments of the rotary element (see col. 4, lines 7-16; col. 5, lines 10-20; col. 5, lines 56-63; col. 6, lines 49-52; Figures 1-4) .

Regarding claims 3 and 20, Tsuno et al. disclose wherein the sensor imperfection value is a weighted average (*DVWF calculation after filtering at calculation n with coefficients: A0, A1, A2, B0, B1*) of sensor imperfection values of previous and current revolutions of the rotary element (see col. 5, lines 56-67).

Regarding claims 4 and 21, Tsuno et al. disclose a method and a system for an anti-skid controller having accurate road surface detection capabilities comprising a filter processor (A6a)) (*e.g. low pass filter*) (see col. 5, lines 4-19; Figures 3). However, Tsuno et al. is silent as to the specifics of applying mathematical formula within the filter unit.

Nevertheless, applying any mathematical formulae, including that of the claimed invention, would have been an obvious design choice for one of ordinary skill in the art because it facilitates known mathematical means for determining a characteristic signal (*e.g. a sensor imperfection signal*). Since the invention fails to provide novel or unexpected result from the usage of said claimed formulae, use of many mathematical means, including that of the claimed invention, would be an obvious matter of design choice within the skill of the art.

Regarding claim 22-24, Tsuno et al. disclose an anti-skid controller having accurate road surface detection capabilities, the method and system comprising the step of determining a variance (*variance DVWB*) of the imperfection-corrected sensor signal (*signal from variance calculation unit (a6b)*), and estimating the first estimation value (*output signal form the road determination unit (a6c)*) on the basis of the variance thus determined (see col. 5, lines 10-20; col. 5, lines 56-63; col. 6, line 49 – col. 7, line 18; Figures 1-4, 8).

Regarding claims 25-26 and 29, Tsuno et al. disclose a method and a system for an anti-skid controller having accurate road surface detection capabilities comprising the step of determining a variance DVWB of a wheel (see col. 6, lines 24-26). However, Tsuno et al. is silent as to the specifics of applying mathematical formula for determining wheel signal change value.

Nevertheless, applying any mathematical formulae, including that of the claimed invention, would have been an obvious design choice for one of ordinary skill in the art because it facilitates known mathematical means for determining a variation of signal value with respect to a set of predetermined thresholds. Since the invention fails to provide novel or unexpected result from the usage of said claimed formulae, use of many mathematical means, including that of the claimed invention, would be an obvious matter of design choice within the skill of the art.

Allowable Subject Matter

Claims 5-12, 13-16 and 30-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JORGE O. PECHE whose telephone number is (571)270-1339. The examiner can normally be reached on 8:30 am - 5:30 pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi H. Tran can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Art Unit: 3664

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jorge O Peche/

Examiner, Art Unit 3664

/KHOI TRAN/

Supervisory Patent Examiner, Art Unit 3664